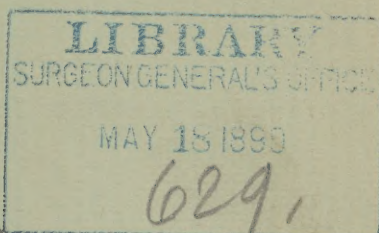


BULKLEY (L.D.)

"DEFICIENT EXCRETION FROM KIDNEYS NOT ORGANICALLY DISEASED,
AND SOME OF THE DISEASES PECULIAR TO WOMEN,"
AND DISEASES OF THE SKIN.

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ONE year ago Dr. James H. Etheridge, of Chicago, by invitation, made an address before this Society, the title of which was the first portion of that above given. As there was no discussion, except some remarks made by the present writer, it seemed best to present the matter again, with the author's full consent, in the hope that the important subject might receive further consideration from the members present, and that it might thus become doubly impressed on those likely to meet the cases referred to.

While the present writer disclaims all special knowledge in regard to diseases peculiar to women, he feels particularly interested in the subject which Dr. Etheridge so ably presented, for several reasons. Incidentally he has met with many female patients, coming under treatment for various diseases of the skin, who were known to have also various uterine disorders of distressing character, and many of these patients had previously undergone varied and prolonged gynecological treatment, often with unsatisfactory results. These uterine disorders he has seen improved and often quite recovered from under lines of treatment directed for their skin difficulty, which quite coincided with those laid down by Dr. Etheridge, and without gynecological treatment. He therefore begs to present the subject again as briefly and clearly as possible, urging the profession to recognize the principles and employ the methods laid down by the distinguished author of the paper alluded to. Dr. Etheridge has kindly given permission to use in the freest manner possible the material presented by him, which will be done as far as necessary to make the matter clear and forceful.

“Toxic materials always reside within the human body. They

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constitute the waste-products of living beings. From birth to death they battle for supremacy. So long as they are plentifully excreted, death is postponed. The skin, the pulmonary mucous membrane, the bowel, and the kidney constitute the avenues of escape for all toxic materials from our bodies. If one of these emunctories be crippled, the initiation of death is manifest. . . . The physician who busies himself with solving the problem of the initial departure from the proper performance of excretion enters a new field of labor. It is the most interesting one he can invade to-day. . . . Herein he deals with the beginnings of disease." Such are the strong words with which Dr. Etheridge introduces his interesting and important study.

Prominent among the systemic derangements which lead to a vitiation of the blood-current and the retention in the system of the waste-products of animal life undoubtedly stands imperfect kidney excretion; the elements composing the urine are known to be poisonous both to the individual forming them and also to animals when artificially introduced. Extirpation of both kidneys is very quickly followed by death; the gradual retention of these normally excreted poisons, by means of imperfect elimination from the kidneys, leads, as many have shown, to various forms of disorder and disease in many organs of the body.

Dr. Etheridge has rendered an inestimable service to the profession and to suffering females in earnestly calling attention to the fact, which I can confirm most positively, that this insufficient kidney secretion plays a very important part in the production and continuance of many of the diseases peculiar to women. The study of this initiative cause of these diseases merits the most serious consideration of the profession.

How far the errors observed in the excretion from the kidneys pertain to the action of those organs alone does not belong to our present discussion, nor how far the remedies used have for their action solely their influence on the kidneys. Undoubtedly the liver plays a very important share, as also the digestive organs, in rendering the ultimate process of removal of effete products imperfect. Suffice for the present that we discover in the kidney excretion the evidences of the imperfect removal of the waste and poisonous substances, and by means of the improved excretion from the kidneys we find the proof of their proper removal and consequent good health.

Recognizing that the proportion of the solids in the normal urine bears a certain ratio to the normal body-weight, below a certain percentage of which they cannot fall without indicating "renal insufficiency," Dr. Etheridge has given a table, prepared by an expert physiologist, which is here reproduced :

TABLE I.—RELATION OF BODY-WEIGHT OF HEALTHY HUMAN BEINGS TO TOTAL DAILY EXCRETION OF URINARY SOLIDS.

<i>Weight.</i>	<i>Total urinary solids.</i>	<i>Weight.</i>	<i>Total urinary solids.</i>
40 pounds . . .	392 grains.	130 pounds . . .	1028 grains.
50 " . . .	479 "	140 " . . .	1078 "
60 " . . .	563 "	150 " . . .	1150 "
70 " . . .	639 "	160 " . . .	1198 "
80 " . . .	716 "	170 " . . .	1237 "
90 " . . .	789 "	180 " . . .	1260 "
100 " . . .	854 "	190 " . . .	1300 "
110 " . . .	916 "	200 " . . .	1330 "
120 " . . .	974 "		

As this table was constructed for healthy human beings, and, of course, takes into account exercise, Dr. Etheridge does not think that practically quite these amounts can be expected in women who come for treatment. It is to be remembered also that women always excrete less than men, perhaps one-tenth less. He would therefore, from experience, fix the limit at 500 grains for a woman weighing 90 pounds and 1100 grains for one weighing 180 pounds. From these data a scale can easily be constructed, as follows, for practical daily work :

TABLE II.—RELATION OF BODY-WEIGHT OF WOMEN OF AVERAGE HEALTH TO TOTAL DAILY SECRETION OF URINARY SOLIDS.

<i>Weight.</i>	<i>Total urinary solids.</i>	<i>Weight.</i>	<i>Total urinary solids.</i>
90 pounds . . .	500 grains.	135 pounds . . .	815 grains.
95 " . . .	535 "	140 " . . .	850 "
100 " . . .	570 "	145 " . . .	885 "
105 " . . .	605 "	150 " . . .	920 "
110 " . . .	640 "	155 " . . .	955 "
115 " . . .	675 "	160 " . . .	990 "
120 " . . .	710 "	165 " . . .	1025 "
125 " . . .	745 "	170 " . . .	1060 "
130 " . . .	780 "	175 " . . .	1095 "

This table is at the rate of just 35 grains additional for each five pounds of body-weight, or seven grains to the pound, which is near enough for ordinary daily work. For greater accuracy there should be still some deduction for age ; thus, between forty and fifty years deduct 10 per cent. ; between fifty and sixty deduct

15 per cent. ; and between sixty and seventy deduct 20 per cent. from the amounts above given.

It is not a very difficult matter to carry out the plan of learning the total daily excretion of solids, if it be rightly arranged ; it is especially easy in regard to women, as they are more apt to be at home and willing to attend to such matters. I have long had it done, daily in many instances, and in others at stated intervals. An ordinary two-quart mineral-water bottle is used, with a strip of paper pasted on the side for the scale. This is graduated by filling the bottle from a two-ounce measure and marking off each two ounces ; the intervening ounce can be divided by the eye. Many druggists keep large bottles graduated for this purpose. A glass funnel is placed in the mouth of the bottle, by means of which all the urine can be poured into it as passed. The index is read off, the amount recorded, and the bottle emptied at a fixed hour every day, and a sample of the whole is sent to the office, with the statement of the total amount passed.

From the specific gravity of the sample the total amount of solids passed in the day is easily estimated by Haines's modification of Hassser's method, as given by Dr. Etheridge, which is as follows : *Multiply the last two figures of the specific gravity of the urine by the number of ounces voided in twenty-four hours, and add 10 per cent. to the product.* Thus, if the amount passed in the twenty-four hours was 36 ounces and the specific gravity 1021, it would be $36 \times 21 = 756 + 10 \text{ per cent.} = 831$, the number of grains of solids in the whole amount ; compared with the table it can be readily ascertained if this is above or below the normal amount for the body-weight of the patient.

It will be noticed that this estimate is for the total solids of the urine, and not for the urea alone ; the estimation of this latter is a relatively slow and laborious process, and, while often extremely valuable, is really not always necessary ; for, under normal conditions, the urea represents nearly one-half of the solid constituents of the urine, and so would be expected to vary with the total solids. It is to be remembered that our study is in regard to kidneys not organically diseased, and at present no reference is made to albumin in the urine.

But, further, the toxicity of the urine does not depend upon the urea alone. Etheridge states that "the coloring-matter and other organic substances removed by charcoal filtration contribute at least

one-half of the toxic power of the urine," and he attributes a considerable proportion to the urinary salts of potassa.

It will be noticed, however, that very little has been said in regard to the actual quantity of the urine passed, representing the amount of water in it, or the solubility of its constituents—a point hardly alluded to by the writer of the previous paper. The urinary water may vary so greatly from day to day, according to the amount of fluid drank and the activity of the secretion of the skin and respiratory organs, that it is, in some ways, of less importance than the actual solids of the urine, which represent the removal of the waste-products of metabolism from the body. But, on the other hand, it is often immensely important, and should always be known and appreciated; for even if the total amount of solids voided may be up to normal, there is still insufficiency of kidney action, and consequently ill health, if the proportion of water be not also about normal. A smaller amount of water, with higher specific gravity, and consequently containing a normal daily amount of urinary solids, does not conduce to the good health which a normal amount of urine with a lower gravity would indicate. Clinically, this matter is often of the very greatest importance, and I could illustrate it by dozens of instances did time and space permit.

Dr. Etheridge gives some very interesting cases illustrating the ill effects of renal inadequacy and their relief upon the employment of appropriate diuretic treatment, which I will very briefly quote before adding my own clinical statements and comments:

CASE I.—Mrs. C., multipara; had general metritis, with deep, double laceration of the cervix, with an obstinate bronchitis, and profuse secretion. The severity of the cough increased the pelvic suffering and vesical irritability, also the profuse leucorrhœa. Each winter she had been an invalid, submitting to very much gynecological treatment, and had sought relief in warmer climates, where she was better, as also in summer; but with the advent of cold weather the bronchitis returned, aggravating all her other troubles. Finally it was found that she was passing only 298 grains of urinary solids, when 850 grains was her normal amount. Under stimulating diuretics, tonics, and a laxative, the urinary solids were increased in thirty days to 950 grains; the cough had disappeared, though in mid-winter, and she was shortly in better condition than for many years.

CASE II.—Miss G., aged twenty-three years; had menstruated only five times in the previous year; she had backaches and headaches, circumpelvic pains, increased by exercise; an albuminous leucorrhœa, and great nervousness. The ascending colon was loaded with feces. She should have voided 850 grains of urinary solids daily, but was passing only 485. Under treat-

ment by laxatives and diuretics the urinary solids were increased to over 1300 grains for a number of days, and regular menstruation returned. When, from neglect, there was again insufficiency of the solids in the urine the amenorrhœa returned, and a recurrence to diuretics again made her monthly sickness appear regularly.

CASE III.—Mrs. B., aged thirty-six years, the mother of three children, and the victim of many abortions, complained of pelvic weight, general rachialgia, tender spine, pleurodynia in left chest, excessive nervousness, and moderate metrorrhagia; she had a moderate metritis. She weighed 154 pounds, and should have passed 900 grains of urinary solids daily, but was voiding only 480 grains. Her urinary solids were kept above 1000 grains daily for many weeks, and with local treatment and tonics she was cured in four months.

My own experience in regard to the value of diuretic treatment in many disorders peculiar to women dates back a good many years, and has come to me slowly, though very convincingly; but I have always hesitated about reporting on the subject, because of my want of acquaintance with the actual condition of the pelvic organs, except from a report as to those who had previously seen the case or cases, aided by the statements of the patient. But as I have gone on, year after year, seeing and knowing of the vast improvement which occurred in my patients in regard to symptoms pointing to the pelvic organs of which they had complained, I have become more and more convinced of the reality of what I was observing, and more and more confident as to prospective benefit when patients complained of uterine or other pelvic derangements.

When, therefore, Dr. Etheridge spoke with such positiveness, I was pleased, indeed, to find my own experience verified by so distinguished an authority, and I felt justified in adding my testimony to the same facts, observed from quite a different portion of the medical field; for it need hardly be added that my cases came to me for the treatment of various diseases of the skin, and not for uterine or female troubles.

The first case, which impressed me perhaps most forcibly of all, occurred at least twenty years ago. The name of the patient has gone from me, so that I cannot look up the notes of the case, but the details are yet very vivid in my mind, for many reasons.

The patient was a girl of about twenty-three years of age, with one of the worst case of indurated acne that I had seen; the cheeks and chin being dreadfully disfigured. She gave the history of very great uterine trouble,

for which she had received an infinity of treatment; for a number of years she had profuse menorrhagia with very great pain. Her condition had become so bad that an elevator had been put in her home for her use, as she never could go upstairs. She drove to my office, and, as this was then on the second floor of a basement-house, I saw her the first few times in the reception-room on the ground floor.

For her acne I gave her first alkaline diuretics and laxatives, tonics, etc., with a regulated diet, and she responded well to treatment. I remember well my surprise when one day she walked upstairs to my office. I shortly persuaded her to take a little exercise, walking a block, and gradually more; and, to be brief, by the time the treatment for the acne was completed she walked a mile to my house, and had abandoned her elevator at home, and the symptoms looking toward the uterine function had ceased. She had had no gynecological treatment in the meantime, and I do not think that I knew what condition existed in the pelvic organs. In treating constitutionally the condition I found on the face, the general results followed; and this treatment was very decidedly in the line of a relief to insufficient kidney and bowel action.

It is hardly necessary to occupy time in relating individual cases, and indeed it is difficult to make selections from the notes of several dozen cases now before me; there are so many which exhibit gains in the directions mentioned in a striking degree. It is really now of daily occurrence for me to see patients who have suffered from many of the diseased conditions peculiar to women become freed from them under treatment directed largely along the lines advocated by Dr. Etheridge, and given mainly on account of skin diseases for which they sought relief. And I may say that almost without exception such cases have exhibited insufficient kidney action; many of them, of course, being also complicated with constipation and primary or secondary indigestion.

In this way I have seen many patients with amenorrhœa, in varying degrees, in whom the menses have been thus established in a regular manner; but, as in Dr. Etheridge's case, their trouble will often return when the treatment is neglected for some time, and from one cause or another the insufficient action of the kidneys returns. We all know of many instances where the menstrual flow has been suddenly checked by chilling of the feet, and it is just this same accident which so often deranges kidney action. Irregularities of the menses, both as to the interval and the duration, have constantly been observed by me to disappear as the eliminative treatment necessary for the skin disease has gotten under full action. Excessive flowing has also been met with from time to time which has been regulated by the same line of treatment.

But it is in dysmenorrhœa that the largest number of most interesting cases are found, and of these I could give many very striking examples. It is not at all uncommon for me to learn from a patient that since she had been under treatment the monthly flow had become more regular and natural than for years previously. Many who have suffered so severely that even opiates were required with each monthly sickness to make life endurable, have, when under full treatment, absolutely lost all pain and become even unconscious as to when the menstrual epoch begins. And it has occasionally happened that a mother has brought a second daughter to me, not at all for the treatment of any skin disease, but solely for the relief of menstrual difficulties, because another daughter had found such benefit while under treatment for the skin.

My experience in a very considerable number of cases has also led me to the belief that many of the ills and discomforts complained of at the period of change of life, and usually more or less accredited to this condition, as though dependent upon it, are in reality due to faulty elimination, principally of the kidneys. I could cite many, many instances where attention to this element has resulted in the disappearance of the unpleasant symptoms in very brief time, while a neglect of the same would be followed by their recurrence, only to again disappear under exactly proper treatment.

I am quite aware that some statements I have made may seem exaggerated, and I may seem unwarranted in speaking thus positively in regard to matters outside of my chosen specialty. I can only assure you that I am speaking of what I have observed and know; for surely even the gynecologist cannot know of the sufferings of patients except from their own statements; and I can verify the facts by many physicians who have seen cases with me. I may also say that in the local societies and to friends I have mentioned these ideas, and others have seen like good results in patients where this plan of treatment has been put in thorough practice.

It will be understood, of course, that in the cases referred to there has been no local or gynecological treatment employed at the time, as I never, in any way, attempt such; nor have I generally known what, if any, local disorder or displacement existed, as I never make examinations in such cases, but send patients to gynecologists when special treatment is required.

I do not, however, wish to be misunderstood in regard to the

matters of which I have spoken. I by no means claim that care in regard to deficient urinary secretion will cure all the ills to which woman is heir. I most fully appreciate the need of the gynecologists, and recognize in the highest degree the splendid work which has been accomplished by them in the relief of suffering women; but from experience I know that many cases of uterine disorders can be relieved and indeed cured by full and adequate general medical treatment, including attention to and rectification of a faulty urinary secretion, which had too often been previously neglected. I cannot do better than to close with a quotation of the final part of Dr. Etheridge's excellent paper:

"No intimation is here given that it is the most important factor in diseases of women. To set up such a claim would be most absurd. The aim of this article is solely to call attention to one line of treatment that has been all but universally neglected heretofore and to invite observation and original investigations.

"There is the gravest reason for thinking that a very close relation, even that of cause and effect, exists between renal insufficiency and pelvic disorders. The developmental phase of the renal and generative organs constitutes that reason. Embryologically, these two sets of important organs arise from the same source. The mesoblast in the ovum gives rise to the muscles, bones, circulatory and lymphatic systems, the urinary and generative organs. From this fact it becomes an easy matter to infer that derangements in one set of the organs can produce, in a reflex way, if you please, or at least are very frequently associated with derangements of the other.

"Since observation shows the numerous cases of coexistence between renal insufficiency and neuralgias, mucous membrane disorders, and serous membrane inflammations, one cannot question the possibility of the insufficiency producing or permitting amenorrhœas, dysmenorrhœas, leucorrhœas, and attacks of pelvic peritonitis. It is strongly emphasized that the position is not assumed that all cases of these disorders are produced by renal insufficiency, but from the fact that many of them are relieved by including in the treatment remedies that increase the urinary solids, the conclusion cannot be resisted that cause and effect actually exist between many of them and the deficiency of urinary ingredients."

DISCUSSION.

DR. H. R. HOPKINS, of Buffalo: I wish to emphasize that which the speaker has very well put, that in estimating the urinary conditions or complications we are apt to overlook the one important matter which we should inquire into. That part of the examination which relates to the presence of albumin, or sugar, or casts, is probably the least important, for the question of the renal functions of the patient have scarcely been touched, since in eclampsia, albuminuria, and a large variety of dietetic disturbances there is for a long time a period of renal incompetency which is indicated, and indicated invariably, by a deficiency in urinary solids, and it is infinitely more important to bring out this fact than to determine later the presence of albumin or sugar when the time for effective treatment may have been lost.

DR. R. W. WILCOX, of New York: It is unfortunate that the profession does not appreciate the importance of an estimation of the amount of urinary solids. It is now many years since Sir Andrew Clark called attention to renal insufficiency, and many years since the more advanced French clinicians have been writing upon the subject. Long before we find albumin or casts, evidence of renal insufficiency can be determined if a careful estimate is made of the quantity of urine and of the total solids.

DR. WOODS HUTCHINSON, of Buffalo: We have here the edifying spectacle of two specialists—a gynecologist and a dermatologist, both uniting in testifying that a large and important class of the diseases they are called upon to treat are due to disturbances of an organ outside the domain of either of them. As an embryologist I am struck with the sympathy which is here shown to exist between the different portions of the great tissue-sheets—the primitive germ-layers. On the one hand, we have the epithelium of the skin sympathizing (eczematously) with its remote cousin or descendant, the secretive epithelium of the Malpighian capsules and tubules. On the other hand, we have the mesoblastic tissues of the uterus and tubes almost similarly sympathizing with their kindred, the vascular mesh of the kidneys and blood-knots of their glomeruli. “Blood is thicker than water” even in our tissues, and our cells have far longer and more accurate memories than we have.

DR. A. T. BRISTOW, of Brooklyn: I have been taught to regard the urea as the most important factor in the urine, and any system of determining the amount of solids which assumes that the relation between this and the amount of urea is constant, is faulty. By the

method given it would be assumed that in fifty ounces of urine of a specific gravity of 1020 there would be a certain number of grains of urea, but that by no means follows. I call to mind a very interesting case in my practice last winter, in which the specific gravity of the urine was fairly constant, but the urea oscillated in the most extraordinary manner, varying as much as 50 per cent. It seems to me that the only positive and accurate way of estimating the urea is the quantitative test, and the easiest test, and one which is fairly accurate, is that by displacement of nitrogen. With Doremus's apparatus this can be carried out in five minutes, and the method is almost absolutely accurate.

DR. BULKLEY: With regard to the objection raised, that the amount of the urea was not considered, I may say that I mentioned in one part of my paper the fact that it is exceedingly desirable to test for the urea. But that requires a certain amount of apparatus and time, and the stopping of other work, which many physicians will not do. But other ingredients beside urea have been found very poisonous to animals. They are in the total solids, and I still hold that to estimate the total solids is most necessary.

